

## ABSTRACT

To insert a cylindrical metallic raw material into a melting cylinder provided in a heating holding cylinder of a metal molding apparatus and to  
5 efficiently semi-melt or completely melt the cylindrical metallic raw material, a clearance between an inner circumferential surface of the melting cylinder and an outer circumferential surface of the cylindrical metallic raw material is limited to a range in which the clearance does not exceed 1.0 mm with respect to the inner diameter of the melting cylinder and the diameter of the  
10 metallic raw material during thermal expansion and the insertion of the metallic raw material in a non-thermal expansion state into the thermally expanding melting cylinder is possible, from a linear expansion coefficient of a metallic raw material and a linear expansion coefficient of a material of the melting cylinder.

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